

WMMC

AFE CONTROL



Description: FeatherLight Single Adjustable Corvette Coilovers
Part Number: 430-401001-N/430-401002-N/430-401003-J
Application: 1997-2013 Chevrolet Corvette (C5/C6)

Tools Needed:

3/8" drive ratchet 24" long
3/8" extension torque
wrench
10mm deep socket
13mm socket
13mm deep socket
15mm socket
18mm deep socket 22mm
socket
lug nut socket (stock 19mm)

15mm flex head ratchet wrench
6mm open end wrench
13mm combination wrench
22mm combination wrench
vice grips
1/2" drive breaker bar 1/2"
drive torque wrench
floor jack jack
stands

This procedure is best performed on a vehicle lift, however it is possible to install these coilovers using a floor jack and jack stands.

If you have any questions, please see the SUPPORT area on our website aFecontrol.com or email info@afecontrol.com.

Front Coilovers

Using proper jacking points, lift and support the front of the car on jack stands. Open the hood and remove any components in the way of the upper front shock mounts.

C5 Note: The windshield washer bottle and the coolant reservoir must be moved. Neither component need be disconnected completely, just moved out of the way to facilitate the removal of the upper shock nut.

C6 Note: The coolant reservoir must be moved on the drivers side of the engine bay, it is held in with two 10mm flange nuts. The hoses do not need to be disconnected, the reservoir just needs to be moved out of the way to facilitate the removal of the upper shock nut.

The upper shock nut is 15mm. Remove the nut from both shocks by holding the flats on the end of the shaft with a 6mm wrench.

Remove the front wheels.

Leaf Spring Removal: Remove the 4 bolts that hold the leaf spring to the front subframe.

Remove the two bolts holding the lower shock mount to the lower control arm. Support the lower ball joint with a floor jack.

Remove the 4 bolts that hold the upper control arm to the frame.

Caution : Note the position of any washers between the upper control arm mounts and the frame for use in re-assembly.

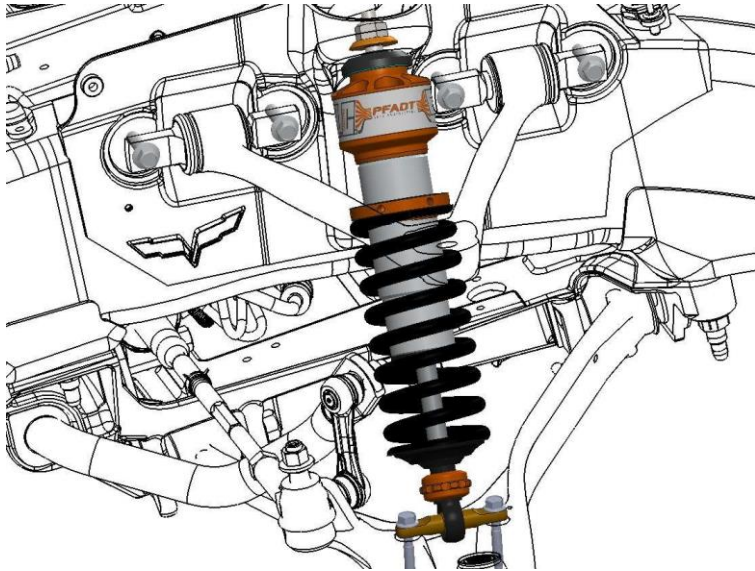
Pivot upper control arm out of the way. Lower the floor jack and remove the shock. Repeat the above process on the other side. Both shocks should be removed and upper control arms free. Remove the sway bar endlink from the control arm on one side. Pivot the upright and lower control arm assembly down to free the leaf spring. The spring will move toward the lowered upright until the opposite end slips free from the opposite control arm. The spring can then be removed.

Installation

Install the coilover in place. Place the bolts in the lower mount to locate the coilover correctly. With the floor jack, raise the lower control arm until the upper mount seats against the frame. Install the two upper washers and M14 nut in the engine compartment. See diagram for proper assembly order.

Pivot the upper control arm back in place and replace the washers and bolts. Torque the upper control arm mounting bolts to 48 lb-ft.





Install the nuts on the lower coilover mounting bolts and torque to 21 lb-ft.

Torque the upper nut on the coilover to 62 lbft. It may be necessary to keep the stud from turning with a 6mm allen wrench or T40 Torx bit.

Repeat install procedure for other side. Replace the swaybar endlink assembly and torque fasteners appropriately. GM production endlinks require 53 lb-ft torque.

Replace components in engine compartment and re-install wheels. Lower the car to the ground.

Torque Specification	Torque
Coilover Upper Mount Nut	62 lb-ft
Lower Shock Mounting Nuts	21 lb-ft
Swaybar Endlink Hardware (GM)	53 lb-ft
Front Upper Control Arm Bolts	48 lb-ft

Rear Coilovers

Using proper jacking points, lift and support the rear of the car on jack stands.

Remove the rear wheels. Supporting the lower ball joint with a floor jack, remove the two bolts holding the upper shock mount plate to the frame. Remove the large bolt that holds the lower shock mount to the control arm.

Remove the fasteners that hold the upper control arm to the frame.

Caution : On aluminum frame cars there may be washers between the control arm mounts and the frame. Note the position of these washers for use in re-assembly.

Pivot upper control arm out of the way. Lower the floor jack and remove the shock. Repeat this process and remove the shock from the other side.

Leaf Spring Removal: Remove the 4 bolts that hold the leaf spring to the rear subframe. Remove the swaybar endlink from one end of the swaybar, freeing the lower control arm to pivot down. Pivot the upright and lower control arm assembly down to free the leaf spring. The spring will move toward the lowered upright until the opposite end slips free from the opposite control arm. The spring can then be removed.

Remove the upper mount plates from the original shock absorbers.

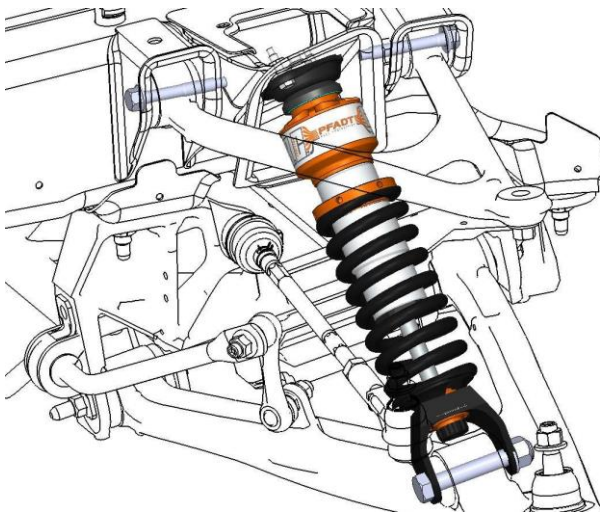
Install the upper mount plates on the coilovers as shown in the diagram on the following page. Torque the M14 nut to 62 lb-ft.



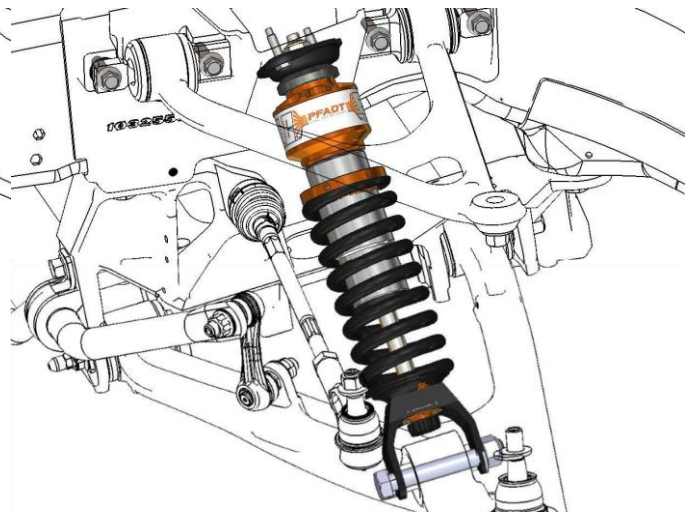


Rear Upper Assembly

Install the coilover in place. Place the bolt in the lower mount to locate the coilover correctly. With the floor jack, raise the lower control arm until the shock is in the correct position. *The upper plates mount with the white dot facing the front of the car.* Install the upper mount bolts and torque to 22 lb-ft.



Steel Frame



Aluminum Frame

Pivot the upper control arm back in place and replace the bolts (and washers on aluminum frame cars). Torque the upper control arm mounting bolts to 48 lb-ft on aluminum frame cars, 81lb-ft on all steel frame cars. See diagrams for proper frame identification.

Torque the lower shock mounting bolt to 81 lb-ft.

Reinstall swaybar endlink and fasteners appropriately. GM production endlinks require 53 lb-ft torque. Repeat the installation procedure for other side. Re-install wheels and lower the car to the ground.

<i>Torque Specification</i>	<i>Torque</i>
Upper Shock Mounting Plate Bolts	22 lb-ft
Lower Shock Mounting Bolt	81 lb-ft
Swaybar Endlink Hardware (GM)	53 lb-ft
Upper Control Arm Bolts (steel frame)	81 lb-ft
Upper Control Arm Bolts (aluminum frame)	48 lb-ft

Setup Guide

Ride Height

The Pfadt Series FeatherLight SA Coilovers have a simple ride height adjustment system. Your dampers are pre-set with a nominal ride height that is Pfadt's recommended C6 ride height - see table below. The initial setup is intended as a starting point only. Each vehicle is different and must be adjusted.

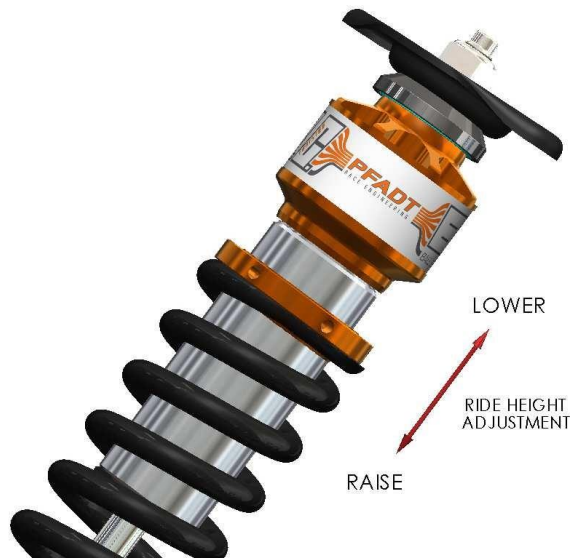
After installing the coilovers and applying proper torque to all fasteners, lower the car to the ground and roll the vehicle back and forth to settle the suspension. If the ride height is close to the desired ride height, it is recommended to drive the car a short distance prior to doing a final ride height setting. Use caution, the alignment settings may have changed during installation.

With the vehicle on a perfectly flat plane, measure the ride height of the vehicle. Calculate how much the ride height must change to meet your desired ride height. Using the guide below calculate how many turns on the spring perches are required. Raise the vehicle, support it safely and remove the wheels. Loosen the set screws on the spring perch with the supplied 3mm allen/spanner wrench. With supplied allen/spanner wrench, adjust the spring an appropriate number of turns. Re-tighten the set screws to lock the perch in place. After the adjustments have been made, repeat the measurement process to confirm the changes.

NOTE: DO NOT OVERTIGHTEN SET SCREWS! The set screws only needs to be snug to keep the perch from moving. Excess tightening may cause damage to the nylon ball which will make it difficult to adjust the perch

Front: 5 turns = 1/2" ride height

Rear: 4.5 turns = 1/2" ride height



Ride Height	Front	Rear	Front	Rear	Front	Rear
all heights to be used only as a guide	(in)	(in)*	Z-Dim (mm)**	D-Dim (mm)**	J-Dim (mm)***	K-Dim (mm)****
C5 - Stock Height	28	29.3	44	108	153	158
Pfadt Recommended Height C5	27	28.3	25	83	128	133
C6 Stock Height	26.9	28.1	45	121	154	171
C6 Z06 Stock Height	26.7	27.6	41	109	150	159
Pfadt Recommended Height C6	26.4	27.3	32	99	141	149

* with stock tires, measured to fender arch

** with stock tires, measured from LBJ lowest point to center of the front side of the LCA forward mounting bolt

*** with stock tires, dimension from rocker panel to ground, measured 35" rearward of front wheel centerline

**** with stock tires, dimension from rocker panel to ground, measured 31" forward of rear wheel centerline

Note: D, J, K and Z dimensions referenced above, are found in the OEM manual and are given as reference.

Please note: Add 10mm to J/K dims for frame/chassis to ground measurements.

When the correct ride height is achieved, take the vehicle for a short drive and then double check the ride height. After the ride height is set, *the vehicle must be aligned*. Ride height changes alter alignment specification. Get a proper alignment.

Holding Shock Body

If for any reason the perch is difficult to adjust, use a **rubber strap wrench** around the threaded area and **NOT THE CIRC HEAD**, to hold the body in place while you apply extra force to move the perch. It is important that you use a strap wrench made of rubber or any other material that will not damage the threads. Failure to follow this procedure may result in a shock failure and will not be covered under warranty.



Important Note:

When adjusting the ride height, Do Not use the CIRC Head as a point of leverage. Any movement that will unscrew the CIRC head from the body tube will result in a sudden loss of gas pressure and ultimately shock failure, voiding the warranty. The CIRC head is under high pressure, unscrewing the CIRC head can result in serious injury.



Damping

Pfadt FeatherLight SA dampers have compression and rebound adjustment combined into one simple adjustment. Damping adjustment can be accomplished on the vehicle without special tools and without removing any damper components.

The damping adjustment knob is located on the end of each main damper shaft. The front shocks have 24 clicks of damping adjustment. It is best to start with the knob at full stiff and count down to your desired setting. The adjustment is more accurate and there may be a couple of extra clicks on the soft end of the adjustment range that are not affecting damping.



On the rear, there are 24 clicks of adjustment. It is best to start with the knob at full stiff and count down to your desired setting. The adjustment is more accurate and there may be a couple of extra clicks on the soft end of the adjustment range that are not affecting damping. Do not adjust beyond the total number of clicks stated in this manual.

Recommended Starting Points

Damper settings are listed in number of clicks down from full stiff.

Street: -8 Front, -10 Rear

Track: -5 Front, -8 Rear

Drag: -20 Front, -16 Rear

Changing Springs

In order to change the springs on a Rear FLG coilover, you must remove the shock fork from the lower end of the shock. This requires a special tool in order to do it properly. We do not recommend this be attempted on your own. If you plan on changing out the springs, please consult aFe Control for service.



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